

Urban Stormwater Approach for the Mid-Atlantic Region and the Chesapeake Bay Watershed

July 2010

I. PURPOSE

This document describes an approach for National Pollutant Discharge Elimination System (NPDES) permitting authorities to follow to develop and issue permits and implementing regulations for discharges from municipal separate storm sewer systems (MS4) in the Mid-Atlantic Region and Chesapeake Bay Watershed. This approach aims to consolidate and optimize all of the authorities and tools available to permitting authorities.

The primary purpose of this permitting approach is to clarify for NPDES program managers the expectations for the issuance of MS4 permits that are clear, enforceable and consistent with applicable regulations and will contribute to meeting the water quality objectives of the Clean Water Act (CWA), including relevant wasteload allocations (WLAs). In addition, this permitting approach discusses the application of residual designation authority to extend NPDES authority to additional discharges; elimination of permit backlogs; technical guidance, training and tools to support the stormwater program; and permit compliance activities.

Nothing in this document establishes authorities or requirements beyond those in the Clean Water Act or its implementing regulations. In some cases, provisions specific to the Chesapeake Bay Watershed are included, and those instances are clearly noted. In the event of a conflict between this guidance and statute or regulatory provisions, the statute or regulation governs.

II. PROBLEM

Municipal stormwater discharges are a significant cause of water quality impairment in the mid-Atlantic region and the Chesapeake Bay Watershed and one of the only sources of pollutants with increasing loads to the Bay and its tributaries. As new development creates new impervious surfaces, stormwater discharges and associated pollutant loads increase. Meanwhile, stormwater discharges from many existing sources are not being adequately managed because permits do not set adequate performance objectives and do not include other key provisions. In addition, there are a number of currently unregulated municipal stormwater discharges contributing to pollutant loads; those should be evaluated for possible regulation. Decisions not to regulate these discharges should be reviewed and reconsidered.

III. BACKGROUND

Among the key findings of the 2009 National Research Council (NRC) report, *Urban Stormwater Management in the United States*, is that the stormwater regulatory program is failing to meet the objectives of the Clean Water Act. Recommendations in this report include:

- the need for permits with more specific, measurable, enforceable provisions;

- a focus on the hydrologic impacts of stormwater discharges, in addition to pollutant concentrations;
- control of stormwater volumes through measures that infiltrate, evapotranspire and harvest rainwater;
- and improved monitoring.

In response to this study, EPA has undertaken a national stormwater rule-making to address a number of the key recommendations. These planned improvements to national regulations are expected to improve the effectiveness of the stormwater permit program nation-wide as well as in the Bay watershed. EPA plans to propose a stormwater rule in late 2011 and finalize the regulation in late 2012.

As part of the *Executive Order 13508, Strategy for Protecting and Restoring the Chesapeake Bay* (May 2010), EPA has committed to consider including in the national rule-making specific supplemental provisions that apply only to stormwater discharges within the Chesapeake Bay Watershed and that are necessary to meet the water quality objectives of the Strategy. There is widespread recognition, however, that some improvements to these programs can be made within the context of current national regulations and that such improvements should be implemented as soon as possible.

In addition, EPA will issue a final total maximum daily load (TMDL) for Chesapeake Bay nutrient and sediment loadings in December of 2010. The TMDL will identify levels of nitrogen, phosphorus and sediment that will result in attaining water quality standards and goals for the Bay. The seven bay jurisdictions are expected to develop Watershed Implementation Plans (WIPs) to implement the TMDL that will identify the pollutant reductions needed from point and nonpoint sources in order to meet these water quality standards and goals and the program improvements that are expected to accomplish these reductions. The pollutant reductions that are called for from point source discharges are expected to include reductions in pollutants in stormwater from urban areas. These new reductions of pollutants in stormwater discharges will need to be accomplished, at least partially, through improved effectiveness of MS4 permits. Achieving these new reductions is expected to require substantive improvements to these permits and their implementation.

EPA has committed in the EO 13508 *Strategy* to provide guidance to the states (this document) in order to support state actions to improve municipal stormwater permit programs. These program improvements should be reflected in Watershed Implementation Plans to the fullest extent possible.

IV. APPROACH

- A. Municipal Separate Storm Sewer System (MS4) Permits.** The iterative process as described in the preamble to the Phase II Rule (Federal Register volume 64, pages 68753-68754) requires continual improvements in the program in order to attain water quality standards. Permits issued or renewed for discharges from large, medium and small MS4s, whether individual or general, issued after the date of this document and prior to the effective date of new stormwater regulations described above, should include, at a

minimum, the elements and provisions described in 1-11 below. It is also appropriate to include one or more of these provisions in an enforceable state regulation rather than in an NPDES permit as long as it is incorporated by reference into the appropriate permit, and applies to the relevant set of regulated discharges.

1. **Post Construction Performance Standards:** 40 C.F.R. §122.26(d)(2)(iv)(A)(2) and 40 C.F.R. §122.34(b)(5) require that the stormwater management program include controls for long-term stormwater management when new and redevelopment occurs. Studies, such as the National Research Council study noted above, and guidance, such as the *Urban and Suburban Guidance for Federal Land Management in the Chesapeake Bay Watershed* (EPA, 2010) discuss the critical importance and means of managing stormwater flows both for purposes of hydrologic stability to protect designated uses and for meeting water quality standards for other pollutants. “Post-Construction” performance standards establish implementation targets for effectively managing stormwater flows once construction ends. Therefore, permits should include “post-construction” performance standards for newly developed and redeveloped sites that provide for preserving and restoring site hydrologic condition as necessary to attain water quality standards in receiving waters. An appropriate standard should account not just for discharge rates, but also discharge volume and duration.
2. **Consideration of Federal Facilities.** NPDES permits for federal facility MS4s and permits that will apply to other MS4s that receive discharges from federal facilities must, like MS4 permits generally, include requirements for controlling the discharge of pollutants in stormwater to the maximum extent practicable and any more stringent requirements necessary to meet water quality requirements of the CWA. In implementing these requirements for federal facility MS4 permits and permits for MS4s with federal facilities in their service areas, permit writers should consider the specific practices and requirements for new development and redevelopment discussed in *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act* (EISA). This guidance identifies a number of practices and techniques (e.g., on-site retention volume, matching of hydrologic curves) that may be appropriate for meeting CWA requirements. CWA permits do not implement EISA; however EISA guidance should be considered in determining what constitutes “maximum extent practicable” for MS4s with respect to stormwater controls for new development and redevelopment at federal facilities.
3. **Retrofitting for Existing Discharges:** Pursuant to 40 C.F.R. §122.34(e)(1), permittees must comply with any more stringent effluent limitations to protect water quality, that modify or are in addition to the minimum control measures, based on an appropriate TMDL or equivalent analysis. 40 C.F.R. § 122.34(e)(1). As detailed in the 2009 NRC study, *Urban Stormwater Management in the United States*, existing stormwater discharges from impervious surfaces are responsible for many of the impairments to urban receiving waters. Therefore, where necessary to ensure that discharges do not cause or contribute to violations of water quality standards, permits should include provisions for retrofitting stormwater management practices at existing sources of stormwater discharges. Such retrofit practices should be designed to preserve or restore site hydrologic conditions as necessary to attain water quality standards in receiving waters. Permit writers may consider requiring development of a long term retrofit

strategy which provides for implementation of retrofit actions over a multi-year period and inclusion of enforceable interim milestones that allow tracking of progress toward these longer-term objectives. In order to serve as a basis for future permit requirements to implement the TMDL, any such long-term strategies should be consistent with TMDL assumptions and expectations. Retrofit commitments may be performance based allowing sufficient flexibility for the permittee to find the means to comply. Strategies to achieve retrofit objectives may include the use of publicly controlled lands, such as retrofitting streets as green streets, and the use of numeric objectives for the adoption of various green infrastructure techniques such as green roofs, bioretention, tree plantings and other management practices. Incentive programs should be considered for privately held lands where other direct authority is not available. Multi-year strategies may also include stream restorations where they are demonstrated to be effective.

4. **Reducing Turf Grass Fertilizer:** For discharges to the Chesapeake Bay watershed, or other waterbodies with impairments attributable to nutrients and/or WLAs for nitrogen or phosphorus, permits should include specific activities targeted for the reduction in use of phosphorus and nitrogen fertilizers in turf grass. These activities should include specific numeric objectives and milestones. Permits should also describe how reductions in use of such fertilizers will be measured relative to a baseline year (e.g. 2010). EPA believes that a reduction of five percent from baseline usage is an appropriate numeric target for a five year permit term. EPA recognizes that some municipalities may not have authority over private application of fertilizer. Public education campaigns with measurable goals should be considered in such circumstances. States are also encouraged to implement state-wide turf grass fertilizer restriction programs outside of the permitting program.
5. **Accountability Mechanisms:** The permit should also include the necessary accountability mechanisms. Particularly in relation to requirements for site planning and review, operation and maintenance, inspections and appropriate enforcement follow-up, permits should include specific requirements for development and maintenance of tracking systems, and standard reporting metrics. The use of EPA's MS4 Report Form should be considered to meet MS4 reporting protocols under Chesapeake Bay Watershed Implementation Plans. Permitting authorities may include this as a cover sheet to their own additional reporting requirements, or adapt and incorporate this into their own forms, as long as the individual reporting elements are covered. EPA and state programs may collaboratively modify this form over time to adapt to an evolving program.
6. **TMDL Implementation:** Pursuant to section 301(b)(1)(C) of the Clean Water Act and 40 C.F.R. § 122.44(d)(1)(vii)(B) permits must include any more stringent limitations, including those necessary to meet water quality standards, or schedules of compliance, that are consistent with all approved TMDL WLAs, including any requirements to offset new or increased discharges. Permits should include provisions that allow reopening and modification of permits if new WLAs are adopted during the permit term. Permits implementing Chesapeake Bay watershed WLAs should also include appropriate 2 year milestones, and the reporting requirements to determine if these milestones are being met.

7. **Water Quality Trading:** MS4 permittees may participate in approved state trading programs that are consistent with policies outlined in the Water Quality Trading Toolkit for Permit Writers (EPA 2007, updated 2009), and any subsequently developed EPA guidance or regulations on water quality trading.
8. **Water Quality Monitoring Requirements:** Pursuant to 40 C.F.R. §122.44(i), Phase I permits must include relevant, interpretable and statistically significant evaluation and monitoring provisions. Infrequent end-of-pipe grab sample wet weather monitoring is discouraged, other than for purposes of finding or tracking specific pollutants or sources. Permittees may be encouraged or required to participate in regional monitoring consortiums. Monitoring/evaluation metrics should include physical and biological indicators in receiving water bodies. All monitoring and evaluation frameworks should be clear about how data will be interpreted. For Phase II MS4s, the permit must include evaluation procedures sufficient to clearly identify the progress of the permittee in meeting their program goals and assessing the effectiveness of selected Best Management Practices.
9. **Use of the MS4 Permit Improvement Guide:** Permit writers should use the MS4 Permit Improvement Guide, (EPA, April 2010), to determine appropriate additional permit requirements not specifically addressed in this document.
10. **Issuing Permits with Clear and Measurable Provisions:** It is critical that all permit provisions be clear, objective, specific, measurable, and enforceable. Permits should incorporate clear performance standards, include measurable goals or quantifiable targets for implementation and include specific deadlines for compliance. Doing so will clarify expectations for permittees and also allow permitting authorities to more easily assess compliance. These are not elements to be delegated to permittees as part of their stormwater management program planning or updating processes. Practicability determinations are the obligation of the permitting authority not the permittee. Vague phrases such as “as feasible” and “as possible” and “practicable” are to be avoided in a permit because such caveats allow subjective interpretation, result in inconsistent implementation by permittees, and create difficulties in permit authority oversight and enforcement. The permit writer’s role is to determine what is necessary to achieve in effluent controls and to develop clear, enforceable language that conforms to these determinations.
11. **Prohibition on Transfer of Liability:** Compliance responsibility/liability cannot be transferred to third parties. Memoranda of Understanding and other agreements may be used as tools for permittees to implement needed controls and/or to ensure their own internal accountability, but liability still rests with the permittee for all permit requirements.

B. Permitting Additional Discharges/Residual Designations.

1. **Unregulated MS4s.** MS4s serving populations of 100,000 or more (large and medium MS4s) and MS4s serving populations within the “urbanized area” as defined by the last decennial census are required to have NPDES stormwater permits. CWA § 402(p)(2)(C) and (D); 40 C.F.R. § 122.32(a). In addition, permitting authorities were required to develop criteria to determine which small MS4s outside of urbanized areas with a population density of at least 1,000 people per square mile and a population of at least 10,000, should be regulated. Permitting authorities should consider revising

criteria for designating MS4s (i.e.: requiring these small MS4s to have a stormwater discharge permit) as a means to accomplish pollution reductions called for in the Chesapeake Bay TMDL or other TMDLs. In the case of MS4 discharges within the Bay watershed, states should provide revised criteria along with a list of all small MS4s in the Bay watershed and their status as part of Phase I Watershed Implementation Plans (WIPs). MS4s meeting the new criteria should be designated for regulation and required to have a permit in Phase II WIPs. 40 C.F.R. §123.35(b). Permitting authorities should also revisit MS4 designations and waivers granted under 40 C.F.R. § 122.32(c) and § 123.35(d) throughout the state and identify unregulated discharges that may need to be regulated in order to meet water quality provisions of the Clean Water Act.

2. **Residual Designation Authority for Additional Unregulated Stormwater Discharges.** Pursuant to 40 C.F.R. § 122.26(a)(9)(i)(C) and (D), the Regional Administrator or state permitting authority may designate additional, currently unregulated stormwater discharges for NPDES permit coverage. Municipal stormwater discharges in high growth areas, with extensive impervious areas, and located in headwater areas are among the discharges where additional controls are likely necessary based on WLAs, to address stormwater contributions to violations of a water quality standard, or where a stormwater source (or category of sources) is a significant contributor of pollutants to waters of the U.S. EPA will be working closely with state partners in the application of these authorities.

- C. **Eliminating the Municipal Stormwater Permit Backlog.** In accordance with a letter from the EPA Water Protection Division sent to State NPDES Permit administrators in July 2010, the states have been asked to provide EPA, by September 15, 2010, a plan and schedule to eliminate the backlog of all individual and general MS4 permits as soon as possible. EPA intends to actively oversee the status and reissuance of all MS4 permits and recommends that State NPDES programs consult with EPA early in the permit development process. Therefore, the plan should include specific dates that allow for early consultation with EPA well in advance of public notice, as well as target dates for public notice and permit finalization. EPA will provide comments on this schedule, and if not adequate, will request appropriate changes to the schedule. Plans should identify challenges to meeting this schedule and possible areas of state-EPA collaboration.

- D. **Training, Guidance and Tools.** Implementation of successful stormwater programs requires solid technical support.
 1. States should adopt up-to-date design manuals (or other reference materials) that include practices with specifications that can meet the performance standards described in IV.A.1-4.
 2. EPA welcomes suggestions for technical support needs that could be well met by EPA and/or state-federal collaborations.

- E. **Permit Compliance Inspection/Audit Plan and Schedules.** Compliance evaluations of MS4 programs, and the necessary compliance/enforcement follow-up activities, are critical for the success of the program. Compliance/enforcement authorities should provide to

EPA by September 15, 2010, an MS4 inspection/audit plan for all MS4s. A plan should include the following key provisions:

1. A schedule that reflects prioritization of MS4 audits (including a description of the criteria for prioritization). If audits are partial, the plan should describe which elements will be audited and why.
2. A comprehensive protocol for conducting audits should be used, such as the *MS4 Program Evaluation Guidance*. Audits should focus on MS4 permit provisions that are enforceable, but should also identify permit provisions that are problematic from an enforcement perspective and provide relevant feedback to the permitting program.
3. The plan should include an audit frequency objective of a full or partial audit of each MS4 once per permit term. State enforcement programs should coordinate with EPA's enforcement program at the regional level to ensure all MS4s are covered.
4. The plan should provide that, following an audit, written feed-back detailing findings and recommendations will follow within 6 weeks.
5. The plan should include criteria for initiating and escalating enforcement (i.e., which types of violations are appropriate for which types of enforcement actions).

EPA will provide comments on this schedule, as appropriate. Plans should identify challenges to meeting this schedule and possible areas of state-EPA collaboration.

V. ACCOUNTABILITY

On December 29, 2009 EPA provided a letter to state programs outlining components of an accountability framework associated with implementation of measures to meet TMDL WLAs. Several federal actions described in that letter may be appropriate should MS4 programs not meet the expectations outlined in this MS4 Permitting Approach, including EPA residual designations and NPDES permit objections.

EPA welcomes state proposals for innovative alternatives to the approaches outlined in Part IV, but emphasizes that rigorous and substantive solutions are necessary to meet our shared water quality objectives. Any proposed alternatives must demonstrate that the environmental outcomes will meet the water quality requirements of the CWA. EPA also emphasizes the complementary roles of EPA and State NPDES programs and welcomes suggestions for collaboration on any of these elements.